

Name _____

Period _____

Recording Vibrations Using a Seismograph

Carefully follow the directions on pages 137-141 to complete this lab. Here are some other things to keep in mind:

- As you create your seismograms, pull on the paper as you go.
- You do NOT need to record long strips for each task.
- Keep the force of your tapping constant to be consistent.
- DO NOT tear off the paper until the very end of the lab!

Set up your seismograph as outlined in #2 in your book. Experiment with your seismograph for a few minutes by tapping on the bin on which it is sitting in different ways.

Testing Variables

Pull the paper strip very slowly through the paper frame. Do not shake the bin at all. Adjust the pen so that it marks the paper. Label this strip "Control-No Vibrations."

A. **Direction:** *Follow the procedure outlined in #9 of your book. As you create your seismogram, be sure to label each strip according to the direction in which you pounded ("Parallel," "Perpendicular," or "Surface").*

1. What happened when you pounded on the front of the bin PARALLEL to the seismograph's arm?

2. What happened when you pounded on the side of the bin PERPENDICULAR to the seismograph's arm?

3. What happened when you pounded on the SURFACE of the bin?

B. Distance *Note: Make sure from now on you pound perpendicular to the seismograph's arm. Follow the procedure outlined in #10 of your book. To pound far away, you will have to turn your bin. As you create your seismogram, be sure to label each strip according to the distance from which you pounded ("Close" or "Far").*

4. What happened when you pounded close to the seismograph?

5. What happened when you pounded 30-40cm from the seismograph?

C. Force *Note: Make sure from now on you pound close and perpendicular to the seismograph's arm. Follow the procedure outlined in #11 of your book. Don't forget to create a control strip before you start pounding this time. As you create your seismogram, be sure to label each strip according to the force with which you pounded ("No Force," "Small Force," or "Large Force").*

6. What happened when you pounded gently?

7. What happened when you pounded harder?

Conclusion

Summarize what you learned about how a seismograph records vibrations in terms of their direction, distance, and force by filling in the blanks below.

8. The seismograph only records vibrations that are _____ to the seismograph's arm.

9. The _____ the distance between the seismograph and the vibrations, the higher the amplitude that is recorded (ie-larger lines).

10. The _____ the force of the vibrations, the higher the amplitude that is recorded.

Now you can rip off the entire seismogram you created. Roll it up and secure it with a piece of tape. Write the names of the members of your group on the outside. Turn it in along with all of your group members' labs and clean up your station. Make sure to cap the pen.